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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/067,858	02/08/2002	Shigeo Kittaka	0241110272AA	9659

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EXAMINER

STOCK JR, GORDON J

ART UNIT PAPER NUMBER

2877

DATE MAILED: 03/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/067,858

Applicant(s)

KITAKA ET AL.

Examiner

Gordon J Stock

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AW

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>20020208</u> .  | 6) <input type="checkbox"/> Other: ____.                                    |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings and specification are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference sign(s) not mentioned in the description: S1-S7 of Fig. 4; description of Figs. 3a and 3b. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference sign(s) in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The abstract of the disclosure is objected to because it exceeds 150 words. Correction is required. See MPEP § 608.01(b). In addition, the phrase, (Fig. 4), of line 19 should be removed. Correction is required.
3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the phrases, “h<sub>4</sub>, h<sub>6</sub>, h<sub>8</sub>, . . . as variables” and “h<sub>4</sub>, h<sub>6</sub>, h<sub>8</sub>, . . . are determined” of claims 3 and 5 lack antecedent basis for the disclosure states that h<sub>4</sub>, h<sub>6</sub>, h<sub>8</sub> are used as variables and are determined (page 12, lines 3-5; page 13, lines 5-6; page 15, lines 15-20). Corrections are required.

### ***Claim Rejections - 35 USC § 112 and - 35 USC § 101***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. 101 reads as follows:

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Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. **Claim 5** is rejected under 35 U.S.C. 112 second paragraph as being indefinite, for **claim 5** claims both an apparatus and the method steps of (1)-(3). A single claim which claims both an apparatus and the method steps of using the apparatus is indefinite under 35 U.S.C. 112, second paragraph. *In Ex parte Lyell, 17 USPQ2d 1548 (Bd. Pat. App. & Inter. 1990).*

**Claim 5** is rejected under 35 U.S.C. 101 based on the theory that **claim 5** is directed to neither a "process" nor a "machine," but rather embraces or overlaps two different statutory classes of invention set forth in U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. *Id.* at 1551.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 1-3** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamamoto et al. (JP 55044949 A)** in view of **Baba (RE 33,227)** and **Kittaka (5,949,585)**.

As for **claims 1-3**, Yamamoto in a measurement of refractive index distribution of cylindrical lens having refractive index gradient discloses the following: processing said rod lens so that an optic-axial length of said rod lens is approximately equal to  $P/2$  or an integer multiple of  $P/2$  (table of page 13); setting a patterned surface as an object in the proximity of one end surface and forming an image surface by irradiating surface with condensed monochromatic

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light (lines 1-6 of constitution; Fig. 7); obtaining the paraxial focal point and the curve of curvature of field by observing said image surface and calculating back higher-order distribution coefficients by a fitting process (equations 1-9 of pages 1-2; Figs. 1-6); wherein pattern is lattice structure comprising stripes and positions of focal points on a plurality of lines from a center of said lens are measured to obtain curves of curvature field of meridional image surface with distances from optical axis (13 of Fig. 7; Figs. 1-6). A plurality of  $h_4$  are calculated (table of page 13). However, Yamamoto appears to be silent concerning higher order coefficients or Yamamoto implies the higher order coefficients are zero. Kittaka in an optics using graded-index lens teaches that higher order coefficients are used to correct spherical aberration (col. 3, lines 30-35). And Baba in a gradient index type single lens teaches higher order coefficients for aberration correction (col. 3, lines 10-15). Therefore, it would be obvious to one skilled in the art at the time to determine the higher order coefficients in order to determine precisely spherical aberration of a gradient index type lens.

8. **Claims 4-7** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Yamamoto et al. (JP 55044949 A)**.

As for **claims 4-7**, Yamamoto discloses the following: a light source (11 of Fig. 7); a microscope (15 of Fig. 7); a predetermined pattern (13 of Fig. 7); a CCD, a television camera (16 of Fig. 7); a display unit (17 of Fig. 7). As for a movable stage, the arrows near 13 of Fig. 7 suggest that the pattern is movable in an up and down motion. A movable stage is a preferred support for moving something in two directions. Examiner takes official notice that a movable stage is well known in the art, for supporting and moving objects to be tested. Therefore, it would be obvious to one skilled in the art at the time the invention that the apparatus comprised a

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movable stage for the pattern, for the pattern can move in two directions. As for a linear gauge, the scale to the right of the microscope suggests a gauge. Distance values are needed for the calculations (Figs. 1-6). Therefore, it would be obvious to one skilled in the art at the time the invention was made to have a linear gauge to measure stage pattern movement since the pattern moves in two directions, and for precise refractive index distribution measurements precise distance measurements would be used. As for a computer and storage unit, Yamamoto is silent. However, Examiner takes official notice that computers are well-known in the art for processing data and for being coupled to measurement systems to process data acquired as well as having storage media such as disks, tapes, etc. for storing gathered data. Therefore, it would be obvious to one skilled in the art at the time the invention was made to have a computer coupled to the system in order to gather and process the data acquired.

#### ***Fax/Telephone Numbers***

If the applicant wishes to send a fax dealing with either a proposed amendment or a discussion with a phone interview, then the fax should:

- 1) Contain either a statement "DRAFT" or "PROPOSED AMENDMENT" on the fax cover sheet; and
- 2) Should be unsigned by the attorney or agent.

This will ensure that it will not be entered into the case and will be forwarded to the examiner as quickly as possible.

*Papers related to the application may be submitted to Group 2800 by Fax transmission. Papers should be faxed to Group 2800 via the PTO Fax machine located in Crystal Plaza 4. The form of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The CP4 Fax Machine number is: (703) 872-9306*


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gordon J. Stock whose telephone number is (571) 272-2431. The examiner can normally be reached on Monday-Friday, 9:00 a.m. - 5:30 p.m.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

gs

February 6, 2004

  
Zandra V. Smith  
Primary Examiner  
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